WHAT IS CLAIMED IS:

1. (Currently Amended) A method to perform direct current (~~DC~~) compensation on a Radio Frequency (RF) burst, wherein the RF burst is transmitted between a servicing base station and a wireless terminal in a cellular wireless communication system, the method comprises:

receiving the RF burst, wherein the RF burst is modulated according to either a first modulation format or a second modulation format;

producing a plurality of samples from the RF burst;

averaging at least some of the plurality of samples to produce a DC offset estimate;

subtracting the DC offset estimate from each of the plurality of samples;

identifying the modulation format of the RF burst from the plurality of DC offset estimate subtracted samples;

adding the DC offset estimate to each of the plurality of DC offset estimate subtracted samples when the second modulation format was identified as the modulation format of the RF burst; and

demodulating the plurality of samples according to the identified modulation format of the RF burst.

2. (Currently Amended) The method of Claim 1, wherein:

the first modulation format is Gaussian Minimum Shift Keying (GMSK) modulation ~~GMSK~~; and

the second modulation format is Eight Phase Shift Keying (8PSK) modulation ~~8PSK~~.

3. (Currently Amended) The method of Claim 1, wherein producing the plurality of samples from the RF burst, further comprises:

processing the ~~first~~ RF burst to produce a baseband signal;

extracting a training sequence from the baseband signal, wherein the training sequence comprises In-phases (I) and Quadrature (Q) ~~I phase and Q~~ phases; and

sampling the training sequence to produce the plurality of samples, wherein the samples comprise both I phases and Q phases, and wherein the plurality of samples taken over the training sequence are averaged to produce the DC offset estimate.

4. (Original) The method of Claim 3, wherein the DC offset estimate comprises:

an I phase DC offset estimate; and

a Q phase DC offset estimate.

5. (Original) The method of claim 1, wherein the DC offset estimate is based upon all samples of the RF burst.

6. (Currently Amended) The method of Claim 1, further comprising:

receiving a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;

determining a first accumulated result from processing the subsequent RF and prior RF bursts according to the first modulation format;

determining a second accumulated result from processing the subsequent RF and prior RF bursts according to the second modulation format;

comparing the first accumulated result and the second accumulated result to determine the more favorable accumulated results;

identifying the modulation format associated with the subsequent RF burst based as the modulation format corresponding to the more favorable accumulated result;

demodulating the subsequent RF burst according to the identified modulation format; and

discarding the ~~first~~ RF burst ~~burt~~ when the identified modulation format of the subsequent RF burst compares unfavorably to the identified modulation format of ~~the~~ prior RF bursts.

7. (Currently Amended) The method of Claim 1, further comprising:

receiving a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;

determining a first accumulated result from processing the subsequent RF and prior RF bursts according to the first modulation format;

determining a second accumulated result from processing the subsequent RF and prior RF bursts according to the second modulation format;

comparing the first accumulated result and the second accumulated result to determine the more favorable accumulated results;

identifying the modulation format associated with the subsequent RF burst based as the modulation format corresponding to the more favorable accumulated result;

demodulating the subsequent RF burst according to the identified modulation format; and

reprocessing the ~~first~~ RF burst ~~burt~~ when the identified modulation format of the subsequent RF burst compares unfavorably to the identified modulation format of ~~the~~ prior RF bursts.

8. (Currently Amended) A wireless terminal that comprises:

a Radio Frequency (RF) front end;

a baseband processor communicatively coupled to the RF front end;

an enCOder/DECoder (CODEC) processing module communicatively coupled to the baseband processor;

wherein, the RF front end, the baseband processor, and the CODEC processing module are operable to:

receive a first RF burst, wherein the RF burst is modulated according to either a first modulation format or a second modulation format;

produce a plurality of samples from the first RF burst;

average the plurality of samples to produce a direct current (DC) offset estimate;

subtract the DC offset estimate from each of the plurality of samples;

identify the modulation format of the RF burst from the plurality of DC offset estimated subtracted samples;

add the DC offset estimate to each of the plurality of DC offset estimated subtracted samples when the second modulation format was identified as the modulation format of the RF burst; and

demodulate the RF burst according to the identified modulation format.

9. (Currently Amended) The wireless terminal of Claim 8, wherein:

the first modulation format is Gaussian Minimum Shift Keying (GMSK) modulation ~~GMSK~~; and

the second modulation format is Eight Phase Shift Keying (8PSK) modulation ~~8PSK~~.

10. (Currently Amended) The wireless terminal of Claim 8, wherein, the RF front end, the baseband processor, and the CODEC processing module are further operable to:

process the first RF burst to produce a baseband signal;

extract a training sequence from the baseband signal, wherein the training sequence comprises ~~I phases and Q~~ In-phases (I) and Quadrature (Q) phases; and

sample the training sequence to produce the plurality of samples, wherein the samples comprise both I phases and Q phases, and wherein the plurality of samples taken over the training sequence are averaged to produce the DC offset estimate.

11. (Original) The wireless terminal of Claim 10, wherein the DC offset estimate comprises:

an I phase DC offset estimate; and

a Q phase DC offset estimate.

12. (Currently Amended) The wireless terminal of Claim 8, wherein, the RF front end, the baseband processor, and the CODEC processing module are further operable to:

receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;

determine a first accumulated result from processing the subsequent RF and prior RF bursts according to the first modulation format;

determine a second accumulated result from processing the subsequent RF and prior RF bursts according to the second modulation format;

compare the first accumulated result and the second accumulated result to determine the more favorable accumulated results;

identify the modulation format associated with the subsequent RF burst based as the modulation format corresponding to the more favorable accumulated result;

demodulate the subsequent RF burst according to the identified modulation format; and

discard the first RF burst ~~burt~~ when the identified modulation format of the subsequent RF burst compares unfavorably to the identified modulation format of the prior RF bursts.

13. (Currently Amended) The wireless terminal of Claim 8, wherein, the RF front end, the baseband processor, and the CODEC processing module are further operable to:

receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;

determine a first accumulated result from processing the subsequent RF and prior RF bursts according to the first modulation format;

determine a second accumulated result from processing the subsequent RF and prior RF bursts according to the second modulation format;

compare the first accumulated result and the second accumulated result to determine the more favorable accumulated results;

identify the modulation format associated with the subsequent RF burst based as the modulation format corresponding to the more favorable accumulated result;

demodulate the subsequent RF burst according to the identified modulation format; and

reprocess the first RF burst according to the modulation format identified with the subsequent RF burst when the modulation format identified with the subsequent RF burst compares unfavorably to the modulation format identified with the first RF burst.

14. (Currently Amended) The wireless terminal of Claim 8, wherein the wireless terminal operates according to the Global System for Mobile telecommunications (GSM) ~~GSM~~ standard.

15. (Currently Amended) A wireless terminal that comprises:

a Radio Frequency (RF) front end;

a baseband processor communicatively coupled to the RF front end;

wherein, the RF front end and the baseband processor are operable to:

receive a first RF burst, wherein the RF burst is modulated according to either a first modulation format or a second modulation format;

produce a plurality of samples from the first RF burst;

average the plurality of samples to produce a direct current (~~DC~~) offset estimate;

subtract the DC offset estimate from each of the plurality of samples;

identify the modulation format of the RF burst from the plurality of DC offset estimate subtracted samples;

add the DC offset estimate to each of the plurality of DC offset estimate subtracted samples when the second modulation format was identified as the modulation format of the RF burst; and

demodulate the RF burst according to the identified modulation format.

16. (Currently Amended) The wireless terminal of Claim 15, wherein:

the first modulation format is Gaussian Minimum Shift Keying (GMSK) modulation ~~GMSK~~; and

the second modulation format is Eight Phase Shift Keying (8PSK) modulation ~~8PSK~~.

17. (Currently Amended) The wireless terminal of Claim 15, wherein, the RF front end and the baseband processor are further operable to:

process the first RF burst to produce a baseband signal;

extract a training sequence from the baseband signal, wherein the training sequence comprises ~~I phases and Q~~ In-phases (I) and Quadrature (Q) phases; and

sample the training sequence to produce the plurality of samples, wherein the samples comprise both I phases and Q phases, and wherein the plurality of samples taken over the training sequence are averaged to produce the DC offset estimate.

18. (Original) The wireless terminal of Claim 17, wherein the DC offset estimate comprises:

an I phase DC offset estimate; and

a Q phase DC offset estimate.

19. (Currently Amended) The wireless terminal of Claim 15, wherein, the RF front end and the baseband processor are further operable to:

receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;

determine a first accumulated result from processing the subsequent RF and prior RF bursts according to the first modulation format;

determine a second accumulated result from processing the subsequent RF and prior RF bursts according to the second modulation format;

compare the first accumulated result and the second accumulated result to determine the more favorable accumulated results;

identify the modulation format associated with the subsequent RF burst based as the modulation format corresponding to the more favorable accumulated result;

demodulate the subsequent RF burst according to the identified modulation format; and

discard the first RF burst according to the modulation format identified with the subsequent RF burst when the modulation format identified with the subsequent RF burst compares unfavorably to the modulation format identified with the first RF burst.

20. (Currently Amended) The wireless terminal of Claim 15, wherein, the RF front end and the baseband processor are further operable to:

receive a subsequent RF burst within the data frame from the servicing base station, wherein the subsequent RF burst carries a plurality of modulated symbols;

determine a first accumulated result from processing the subsequent RF and prior RF bursts according to the first modulation format;

determine a second accumulated result from processing the subsequent RF and prior RF bursts according to the second modulation format;

compare the first accumulated result and the second accumulated result to determine the more favorable accumulated results;

identify the modulation format associated with the subsequent RF burst based as the modulation format corresponding to the more favorable accumulated result;

demodulate the subsequent RF burst according to the identified modulation format; and

reprocess the first RF burst according to the modulation format identified with the subsequent RF burst when the modulation format identified with the subsequent RF burst compares unfavorably to the modulation format identified with the first RF burst.

21. (Currently Amended) The wireless terminal of Claim 15, wherein the wireless terminal operates according to the Global System for Mobile telecommunications (GSM) ~~GSM~~ standard.

22. (New) A method to perform direct current (DC) compensation on a Radio Frequency (RF) burst, wherein the RF burst is transmitted between a servicing base station and a wireless terminal in a cellular wireless communication system, the method comprises:

receiving the RF burst, wherein the RF burst is modulated according to either a first modulation format or a second modulation format;

producing a plurality of samples from the RF burst;

averaging at least some of the plurality of samples to produce a DC offset estimate;

subtracting the DC offset estimate from each of the plurality of samples;

identifying the modulation format of the RF burst from the plurality of DC offset estimate subtracted samples;

adding the DC offset estimate to each of the plurality of DC offset estimate subtracted samples when the second modulation format was identified as the modulation format of the RF burst; and

demodulating the plurality of samples according to the identified modulation format of the RF burst.

23. (New) A method to perform direct current (DC) compensation on a Radio Frequency (RF) burst, wherein the RF burst is transmitted between a servicing base station and a wireless terminal in a cellular wireless communication system, the method comprises:

receiving the RF burst, wherein the RF burst is modulated according to either a first modulation format or a second modulation format;

producing a plurality of samples from the RF burst;

averaging at least some of the plurality of samples to produce a DC offset estimate;

subtracting the DC offset estimate from each of the plurality of samples;

identifying the modulation format of the RF burst from the plurality of DC offset estimate subtracted samples;

adding the DC offset estimate to each of the plurality of DC offset estimate subtracted samples when the second modulation format was identified as the modulation format of the RF burst; and

demodulating the plurality of samples according to the identified modulation format of the RF burst.

Claim Objections

Claims 1-3, 6-10, 12, 13, 15-17 and 19-21 are objected to because of the following: informalities. The Examiner states:

> Claims 3, 6 and 7 recite the limitation "the first RF burst" in line 3 of claim 3, line 14 of claim 6, and line 14 of claim 7. There is insufficient antecedent basis for this limitation in the claim.
>
> In line 14 of claims 6, 7 and 12, "burt" should be "burst".
>
> In line 17 of claims 13, 19 and 20, "the RF" should be" the RF burst".
>
> Appropriate correction is required.
>
> In Claims 1, 2, 3, 8, 9, 10,15, 16, 17 and 21, all first instances of acronyms ("DC", "I", "Q", "GMSK", "8PSK", "GSM") should be properly spelled out.

Claims 1-3, 6-10, 12, 13, 15-17 and 19-21 have been amended to overcome the Examiner's objections and Applicants respectfully request the Examiner withdraw the objections and allow Claims 1-3, 6-10, 12, 13, 15-17 and 19-21.

Rejections under 35 U.S.C. § 112

Claims 1-21 stand rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The Examiner states;

> The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention,
>
> Regarding claims 1, 8 and 15: According to figure 6A, the plurality of samples are subtracted with a DC offset (element 609), and then the resulting plurality of samples are used for blind detection of modulation (element 610). However, the claims recite the blind detection of modulation to be based on the original plurality of samples, without the DC offset subtracted. The claims should recite: "Identifying the modulation format of the RF burst from the plurality of DC offset estimate subtracted samples."

Claims 2-7, 9-14, 16-21 are rejected based on rejected base claims.

Claims 1-21 have been amended to overcome the rejections based on the lack of antecedent basis.

Claims 1-21 have been amended appropriately and Applicants respectfully request the Examiner withdraw the rejections and allow Claims 1-21.

Allowable Subject Matter

Claims 1 – 21 but would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 1st paragraph, set forth in the Office Action. Additionally, the Examiner stated that the prior art fails to show a method of performing DC compensation on a RF burst where a DC offset estimate is first subtracted from the signal samples, and then subsequently, depending on the particular modulation format of the RF burst, may be added back to the samples.

The Applicant respectfully submits in accordance with the Examiner's statement that prior art fails to show a method of performing DC compensation of an RF burst where a DC offset estimate is first subtracted from the sample signals and then subsequently, depending on the particular modulation format of the RF burst, may be added back to the samples. That the Applicant respectfully submits new Claims 22 and 23 more particularly claim the invention with regard to the Examiner's statement regarding allowable subject matter.

Claim 22 specifically addresses a method of performing DC compensation on the radio frequency burst wherein the DC offset estimate is first subtracted from the signal samples and then subsequently, depending on the particular modulation format of the RF burst, may be added back to the samples prior to further processing of the samples.

Independent Claim 23 provides a method of performing DC compensation on a plurality of samples obtained by processing a burst communication modulated according to either a first or second modulation format. The DC offset estimate is first subtracted from signal samples and then subsequently, depending on a particular modulation format of the burst communication, may be added back to the samples.